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ABSTRACT

The Centre for Educational Research and Innovation (CERI) was established so that educational change in Organisation for Economic Co-Operation and Development (OECD) countries could be accomplished through a coherent, continuing process of development and experimentation. The main objectives for the Centre are to promote and support the development of research activities in education, to promote and support pilot experiments with a view to introducing and testing innovations in educational systems, and to promote the development of cooperation between member countries in the field of educational research and development. Specific program objectives for educational growth and opportunity have been identified, and these were adopted in each of four areas which needed development in OECD countries: educational growth and opportunity, innovation in higher education, curriculum development and educational technology, and innovation policies and structures. (More detailed reports of CERI's progress in each of these areas are appended.) (SH)

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CENTRE FOR EDUCATIONAL RESEARCH AND INNOVATION

PROGRESS REPORTS UP TO MID-1971 AND OUTLINE OF FUTURE PROGRAMME OF WORK

The Centre for Educational Research and Innovation (CERI) completed its first three years as a largely exploratory venture in the summer of 1971 when it became fully established within the framework of the OECD.

The aims and functions of the Centre were set out in a booklet issued early in 1970 with appendices describing the various activities on which it was engaged. On completion of the 1968-1971 programme it becomes appropriate to replace these appendices with up to date statements of progress made and, further, to indicate the areas of CERI's interest and coverage in the programme planned for mid-1971 onwards.

This new material is contained in the pocket of the original booklet, here attached, which still retains its relevance as background information.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Contents

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Preface

The following progress report is intended to give

1. a comprehensive picture of the objectives, programme and methods of CERI for those with a general interest in the Centre, and
2. a specific progress report on each of the main activities for those wishing to know in detail what is being done.

These detailed progress reports are included separately in the pocket at the back of the report so that they may be sent separately to interested individuals. They will be revised from time to time to give an up-to-date picture of the Centre's work.

Copies of the specific progress reports or of the total report may be obtained by writing to the

CENTRE FOR EDUCATIONAL RESEARCH AND INNOVATION,
OECD, 2, rue André-Pascal, Paris - 16e.

The Governing Board

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* In accordance with the Rules of the OECD, the Secretary General has invited Prof. J. KREMERS to attend the Governing Board Meetings, in an expert capacity.

THE CENTRE FOR EDUCATIONAL RESEARCH AND INNOVATION

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Background

The Centre for Educational Research and Innovation was established on 1st July 1968, for an experimental period of 3 years, with the help of a grant of $1,000,000 from the Ford Foundation. This was later supplemented by a grant of $750,000 from the Shell Group of Companies.

OECD work in the field of education was initially stimulated by concern that economic development in the OECD countries was being hampered by shortages of scientific and technical personnel. The Programme for Scientific and Technical Personnel was established at a time in post-war Western economic development when the emphasis had already moved from economic recovery to the need for steady expansion and growth. It had its origin in the conviction that increased investment in the training of scientific and technical personnel, and in the basic general education on which such training must be built, is an essential ingredient of a forward-looking policy designed to promote long-term economic and social development.

The OECD soon realized that only very large overall expansion of education could provide the economies of Member countries with the required numbers of qualified personnel. All Member countries are now committed to a policy of unprecedented expansion of their educational systems and efforts, dominated by the recognition of the need to relate educational policy to general social and economic progress. In the course of a decade education has replaced defence as the major claimant on public expenditure in most OECD countries, and is accounting for a growing share of national income.

With the expansion of education into a mass system came the realization that the quantitative growth of education could not be fully realized without fundamental qualitative changes, and a possible reassessment of the relationship of education to society and the economy. The OECD countries are faced collectively, and to a considerable extent by surprise, with baffling problems of educational change having deep social and political implications. One consequence has been a growing emphasis in national policies on educational innovation and research. The Committee for Scientific and Technical Personnel was already beginning to react to this new situation when, due to the availability of considerable extra-mural resources from the Ford Foundation and the Shell Group of Companies, these problems were taken up by the new Centre for Educational Research and Innovation.

General Objectives

It is now recognized in all OECD Member countries that significant educational change cannot be achieved through occasional, piece-meal reforms, but necessitates a coherent and a continuing process of development and experimentation in the educational system. This is already becoming a costly affair in terms of resources of manpower and money, and there may be a limit to the number of major innovations that can be tried in a single country at one time. In principle, therefore, there is a strong case for an international sharing of experience and division of labour, and it is to explore this possibility over a period of three years that the Centre has been established.

The main objectives established for the Centre by the Council of the OECD are as follows:

a) to promote and support the development of research activities in education and undertake such research activities where appropriate;

b) to promote and support pilot experiments with a view to introducing and testing innovations in educational systems;

c) to promote the development of co-operation between Member countries in the field of educational research and innovation.

In implementing these terms of reference, the Governing Board of the Centre has been guided by the view that today the connections between economic growth, social development, technology and education are at the heart of the problems of the OECD countries. They have therefore decided that the Centre should continue to focus attention on the relationship between education on the one hand and social and economic development on the other. However, due emphasis should now be given to the social as well as the economic aspects of the problem. Indeed, in the opinion of the Governing Board, the major educational innovations in education currently under consideration in the OECD countries such as comprehensive secondary education and university reform, cannot be effectively developed without placing them in this socio-economic context.

Further, it has been concluded that, since educational change is bound to be dominated by national differences at the stage of implementation, international co-operation is most effective at the point when countries are elaborating general principles. The work of CERI is therefore concentrating on forward-looking innovations as part of the development process in the OECD educational systems.

Accordingly, the programme of work for the Centre, for this experimental period, has been focused on four major development problems in the OECD countries:

a) *Educational growth and educational opportunity* – the need to ensure that educational growth is planned so as to facilitate the maximum equality of educational opportunity.
b) *Innovation in higher education* – the need to develop a university system where teaching is responsive to new social needs and where effective use is made of resources.
c) *Curriculum development and educational technology* – the need to ensure that the quantitative growth of the school system is accompanied by qualitative developments in the form of new curricula, teaching methods and educational technologies.
d) *Innovation policies and structures* – the need to develop policies and structures which facilitate the systematic and orderly introduction of the above and other innovations in education, in such a way as to minimize the present confusion amongst teachers, parents and children.

The programme objectives adopted in each of these four development areas are set out below. Four Progress Reports outlining activities to date in each area are annexed separately so that they may be distributed to institutions or individuals with specialized interests. These reports will be brought up-to-date from time to time.

Programme Objectives

EDUCATIONAL GROWTH AND EDUCATIONAL OPPORTUNITY*

Education has always been considered an important instrument in, and perhaps the main guarantee of, achieving equality of opportunity in modern industrialized societies. Until recently, it was generally thought that the education system had discharged this role quite effectively in most countries. However, more and more evidence is now becoming available indicating that despite the great expansion of education in the OECD countries in the last twenty years, the opportunity gap in education between social groups and classes is still very great in absolute terms. There is, as a consequence, a growing interest in a re-examination of the relationship between education and the "life chances" of the individual.

Many countries are now introducing new experimental policies and programmes in response to this situation. The United States was first to develop active programmes to deal with "poverty in education", and is being followed by many European countries who are now launching experiments and exploring new policies which, even if geared to somewhat different social objectives and backgrounds, nevertheless represent an attack on the same fundamental problems.

The work of CERI in this direction will have three objectives :

a) *To foster international co-operation in educational experiments in order to test and evaluate new policies.*

The aim is to develop co-operation between small groups of countries which are launching specific experiments to explore particular solutions, such as:

- *pre-school programmes,* to bring children into an educational enrivonment before the start of compulsory schooling;
- *primary school enrichment,* to modify traditional curriculum and teaching methods and introduce community programmes to help socially-disadvantaged children;
- *recurrent education,* to provide alternative educational patterns after the period of compulsory schooling, and thereby help the adolescent and adult to profit from education during their working life.

* Activities 1 and 2 in 1970 CERI Programme of Work (CERI/GB (69)13 1st Rev.).

b) *To develop and propose new strategies for improving equality of educational opportunity, based on experiments such as those outlined above.*

It is obvious that the development of such programmes in the Member countries will be very costly, and will necessitate the formulation of new strategies in the implementation of these policies and programmes. The Centre therefore proposes to undertake research on the overall relationships between educational growth and educational opportunity in the OECD countries on the range of alternative strategies and on the development of methods to assist in the formulation of strategic decisions. A Strategy Group of policy makers and educationalists has been established by the Centre to advise in the execution of this work.

c) *To develop methods for formulating "alternative educational futures".*

Such strategic decisions must be related to the long-term objectives of education, which must themselves be formulated in the context of economic and social change. It is therefore necessary to have some picture of the society in which education will function in the future. CERI will try to develop methods for formulating "alternative educational futures", relating them to strategic decision-taking in the educational field.

Two pitfalls must be avoided: on the one hand, statements of policy alternatives based on a simple extrapolation of single variables which oversimplify the direction or complexity of social change; on the other hand, the so-called "creative" definition of normative "futures" which ignore the limitations of resource allocation and of the existing socio-economic structures and values. The Centre will attempt to develop an approach which incorporates the advantages of both.

INNOVATION IN HIGHER EDUCATION*

The crisis in the universities is widespread throughout the OECD area. Its origins must therefore be sought in problems which are common to all or most Member countries.

Universities in all countries are being called upon to respond to two powerful, but to some extent conflicting, pressures. On the one hand there is a need for mass education at the higher level. This is a consequence both of the economic need for a wider and rapidly changing spectrum of higher qualifications and skills and of the rapidly rising social demand for higher education as a consequence of the expansion of secondary education over the last twenty years. On the other hand, there is the need for advanced institutions of higher learning and research to develop the scientific knowledge, higher skills and social criticism which are indispensable in rapidly changing modern countries.

In response to these pressures, new structures of higher education embracing institutions with different functions and goals, and of which the universities are but one part, are becoming more necessary. This problem of new global structures of post-secondary education is being studied by the Committee for Scientific and Technical Personnel.

The solution to the problems of the universities cannot, however, be sought alone in terms of such new structures, for it is abundantly clear that the heart of the present crisis is within the universities themselves. The programme of CERI will therefore concentrate on two major objectives:

a) *The development of new approaches to the teaching process in universities*.

The point of departure for this programme is the recognition that whatever other functions or goals may be attributed to universities, their unique task will remain to advance the frontiers of knowledge and to organise the body of knowledge in such a way that it may be effectively transmitted to students. However, the body of knowledge itself, the conditions under which it is developed, and the social purposes to which it is put, are rapidly changing. Many students feel that the teaching function of the universities has been sacrificed to the research function; that both are being increasingly related to the needs of existing society rather than to changes in society; that creative learning has to some extent been undermined by the growing specialization needed for qualifications in the modern economy; and that there has been a failure to adjust teaching methods to the needs of mass higher education.

* Activity 3 in 1970 CERI Programme of Work.

Following a seminar with students, assistants and professors to discuss these problems, the Centre has decided to launch experiments on three approaches to these problems:

i) the development of interdisciplinary teaching as a response to excessive compartmentalization of subjects;

ii) student participation in the development of curricula and new teaching methods; and

iii) an analysis of new pedagogical needs in the universities.

b) *The formulation of new methods of institutional management and development.*

At the same time that the universities are faced with such challenges in the field of pedagogy, they have also become the consumers of very large financial resources. In all countries, the number and size of universities is growing rapidly, and the process of expansion is likely to go on for many years to come. Few would disagree with the conclusion that the universities are ill prepared for the planning and management of these big resources. Traditional techniques of industrial management are in many cases inappropriate for use in institutions such as the universities, where the "product" is intellectual creativity – and the inescapable conclusion is that the universities themselves must develop effective methods of managing resources and planning future development. The work of the Centre in this area will have three objectives:

i) developing an organisational theory about universities which could provide a framework for the utilization of management science techniques;

ii) building a set of specific management tools and techniques and decision-making procedures; and

iii) promoting experiments in relation to (*i*) and (*ii*) by setting up projects in a number of universities.

This institutional management programme is viewed in terms of systems analysis. CERI will attempt to construct a family of generalized computer models for university management. These systems models will be "open" in the sense of providing an analytic framework that will permit rational discussion by administrators and the faculty and students, as participants in the decision-making process.

CURRICULUM DEVELOPMENT AND EDUCATIONAL TECHNOLOGY*

The effectiveness of education in OECD countries lies in the last analysis in successful teaching in the school. The school is to the educational system what the firm is to the economic system. Effectiveness must be sought not only in terms of national planning and strategies, but also in the school itself.

The great strides towards mass education in the last 20 years have radically changed the conditions of success in teaching, and have brought to bear on teachers, parents and children new social forces which are changing the objectives of the school, the means for achieving them and the relationship to the world at large. New concepts of the curricula, new methods of school organisation and new technologies of teaching abound. The school itself is becoming much more the spearhead of new social goals and values and less the guardian of the traditional culture.

There are signs however that the schools are being overwhelmed to some extent by a tide of changes that are mutually conflicting, untried in practice, and unbacked by necessary research and development work. Even at the national level, responsible authorities are unsure about the institutions, programmes and resources necessary to sustain a fast but manageable rate of change. The concepts and techniques necessary for a continuing modernization of curricula and teaching methods are only vaguely perceived. *The first aim of the Centre's work in this field is thus to clarify trends in curriculum development and educational technology and to assist the development of policies for dealing with them.*

However, it is already clear that whetever policies are adopted and institutions developed, Member countries are already being committed to greatly expanded programmes of developmental work in the educational system. Indeed, it may be more imperative in the immediate years to come for educational authorities to establish a clear developmental policy in education, as opposed to a research policy as such. Active developmental work in the school system could act as both a focus and a stimulus for educational research. Such developmental work is however costly both in terms of manpower and money, and it therefore calls for both a careful choice of major efforts and international co-operation for the mutual

* Activity 4 in 1970 CERI Programme of Work.

exchange of results. *The second aim of the Centre's programme in this area will therefore be to promote international co-operation in development work in strategic areas.* Individualization of curricula and the use of computers in the teaching process have so far been given high priority.

To be effective, the above two objectives of the Centre's programme of work must, in the last analysis, lead to innovative activities in the schools of Member countries. Indeed, all the work of the Centre, be it on educational goals, strategies for change, or new universities, must be reflected in the realities of what can be achieved in the school. *The third aim of the Centre's work in this field is therefore to stimulate the development of an OECD network of experimental schools in which general policies for educational change can be examined at the school level.*

INNOVATION POLICIES AND STRUCTURES*

The pace of educational change has now reached a point where it is no longer sufficient for policy to respond solely to specific problems of educational innovation. As in many other fields of economic and social life, for example industry and agriculture, it is becoming necessary for authorities in Member countries to create the conditions for continuous and systematic educational change, with lower costs to the individual and society. An educational environment should be developed in which change is natural, desirable and readily acceptable.

This objective requires not only clear and vigorous policies towards educational research and development, but also the effective organisation of the innovation process as a whole, which has to be seen as a dynamic process of social change in which research and development are indispensable but not sufficient conditions. Neither can thrive if the political and administrative principles on which educational policy is based act as a positive deterrent to change.

It is one of the dilemmas of the educational policy of some countries that equality is enshrined in the notion of nation-wide uniformity of curricula and qualifications, with consequent dependence on general legislation for educational change. This prevents the schools from taking part in a creative process of educational development, and policies which explicitly recognize their role as an agent of educational change are now necessary.

More specifically, this will involve giving an explicit mandate and status to experiments in the schools, creating career patterns and incentives for teachers so that innovation is stimulated, establishing educational information networds which are selective and speedy in their action, and creating services similar to the field advisory services in agriculture. Within such a framework, research and development programmes will be much more effective.

A pre-condition for establishing such policies and structures for innovation is a more thorough understandirg of the process itself. There is now a wide variety of practical experience in the OECD countries which has never been systematically exploited. *The first aim of the CERI in this area is therefore to promote better understanding of the process of educational innovation, by critical analysis of the practical experience of Member countries.*

* Activity 5 in 1970 CERI Programme of Work.

At the same time, the necessity to establish new structures and institutions is so pressing that this search for deeper understanding must be combined with proposals for policy action. In the context of economic and social development in the 1970s, it is important that educational change be related to all other changes faced by governments, so that there is a coherent policy for innovation where the relationships between all the changes can be identified and managed, one policy for innovation not necessarily disrupting other parts of the system. How can innovation play a meaningful role in such a structure? What new institutions do governments need to establish, encourage or facilitate so that education can change in a systematic, orderly and continuing way? What are the development and research functions, and how could they be linked to the total innovation process?

The answers to these questions will not be the same in all countries, but the basic principles of policy are likely to be similar. *The second aim, therefore, is to encourage the Member countries to work actively on the policy questions of innovation, to assist Member countries to harmonize their activities, and to offer advisory services through the network of experienced people engaged in the field.*

Although, for the reasons outlined above, the accent in the Centre's work to date has been on the innovation as opposed to research element in the Centre's terms of reference, CERI fully recognizes the importance of research both in its own right and as part of the innovation process. Education should certainly share the underlying conviction of modern societies, that their ability to generate and assimilate rapid change is linked with their ability to extend and use scientific knowledge. But social change springs as much from a restatement of problems as from the application of "technologies". Science may promote social change by the direct impact of new concepts and theories on the formulation of policy problems, and there is in consequence a direct link between fundamental research and theory on the one hand and practical action on the other. On the other hand, fundamental research and theory cannot create new teaching/learning systems with the necessary materials, organisational and pedagogical procedures: this is a function of development work, of which the inspiration must be bottlenecks as seen by those responsible for policy.

It does not follow therefore that a policy for research and development in the social sciences will be the same as in the natural sciences. There is consequently a need for a careful formulation of principles before policies for educational research and development are established. CERI is therefore working on a statement of the basis for a "science policy" in the field of education, the aim of which is to assist Member countries in establishing their long-term policies for educational research and development.

Organisation and Methods of Work

GENERAL STRUCTURE AND ORGANISATION

CERI functions as part of the structure of the Organisation for Economic Co-operation and Development, under the general responsibility of the Council for the Organisation and the Secretary-General.

The actual work of the Centre is directly supervised by a Governing Board (see page 5) which is composed of distinguished personalities in the field of education. These persons are appointed by the Secretary General to serve in an individual capacity.

CERI's functions in the field of educational research and innovation call for close co-operation with the OECD Committee for Scientific and Technical Personnel, which is a Committee of officials representing the OECD Member countries. Co-ordination of the CSTP and CERI programmes is assured by the Secretariat and by occasional meetings of an *ad hoc* Group of the two bodies.

The programme of work of the Centre, which is dawn up by the Governing Board and adopted by the OECD Council is executed by the CERI Staff under the general responsibility of the Secretary-General.

METHODS OF WORK

The Methods of work developed by CERI have taken into account the special conditions affecting international co-operation in the field of education. A vigorous programme of international co-operation in educational research and innovation implies action in the OECD countries. The Centre's staff is therefore organised as a central intelligence, advisory and management group whose primary task is to generate the ideas and organisational frameworks which can promote real educational change in OECD Member countries.

The Council of the OECD has therefore given power to CERI to promote pilot experiments, carried out by means of Joint Projects in which a small number of countries co-operate to promote and achieve a specific educational innovation. CERI creates and finances the central machinery which

makes co-operation possible and may in some instances contribute to the individual national experiments. The main responsibility for the latter, however, resides with the Member countries themselves. In this way, considerable intellectual, organisational and financial resources beyond those of the Centre itself are brought into the CERI programme. The national contributions to CERI Joint Projects may be made by public authorities, universities, schools or research institutions, and financial and other contributions may be made by industry and charitable foundations. In this way, a practical means of bringing much energy and many resources into the process of international co-operation has been developed. More than $1,000,000 has already been provided for Joint Projects by national government, educational and industrial sources, of which $264,000 represents contributions by Shell companies in individual countries.

The results and experience through such Joint Projects are of course available to all the Member countries, and the participation of different groups of countries in the various Joint Projects is in itself a form of international co-operation. The main advantage lies in the sharing of the burden of innovation and research in the educational field.

Such Joint Projects, however, need to be seen against the background of general co-operation between the OECD Member countries on issues of common concern. A considerable part of the CERI programme of work is therefore made up of general projects in which all Member countries may participate. However, even in the case of such projects, special efforts are made to secure the maximum involvement of the Member countries by the contributions of sponsoring countries which undertake special responsibilities for providing part of the expertise and part of the financial resources needed for the project; and by the host country which provides facilities and hospitality for events such as conferences, workshops, etc.

All the above projects are carried out with the active support and participation of steering groups representing the Member countries. This has resulted in the establishment of a widespread network of co-operation between individuals, institutions and public authorities with direct responsibilities for educational innovation and research being established.

Annex 1

EDUCATIONAL GROWTH AND EDUCATIONAL OPPORTUNITY

PROGRESS REPORT TO 30th JUNE 1971

(Activities 1 and 2 in the CERI Programme of Work)

EDUCATIONAL GROWTH, EDUCATIONAL OPPORTUNITY, AND PROGRAMMES FOR THE SOCIALLY DISADVANTAGED

The idea that education can be an important means to equalities in societies where men are born unequal is, and will remain, a powerful one. Most, if not all, Member countries, however, are growingly concerned with the fact that, despite educational expenditures which have been growing nearly twice as fast as national wealth, there is still a baffling failure to overcome the starting handicaps of the socially disadvantaged. Attention to this problem has been one of the core activities in CERI's programme since its beginning in 1968.

From the start, a two-pronged attack has been adopted. On the one side, an experimental wing has been extracting what experience and information it can from educational programmes for socially disadvantaged populations that are already realities in a number of OECD countries, with a view to adding to knowledge of the learning function and the learning environment. These programmes, however, concentrate on very specific and relatively small groups in the population (the 'conspicuously disadvantaged') and cannot attempt to cope with obstacles in the way of equal opportunity when entire age groups in the total school population are considered.

This second province is the concern of the analytic wing in CERI which, in the last three years, has been addressing itself to alternative means or strategies that could achieve equality of educational opportunity, given the establishment of new structures acceptable within each national scene. Here, the strategies of compensatory and recurrent education have been the objects of especial concern. This relation of its work to the realities of decision-making led the Centre progressively to conduct its analyses in the context of individual Member countries. In the course of this, it soon felt the need, and has later reaped the benefit, of a group of top-level advisers from the countries themselves. This has been named the Strategy Group.

The CERI publication "Equal Educational Opportunity 1" issued in February 1971 presents a statement of this manifold problem of unequal educational opportunity as it currently exists in Western Europe and the United States. It outlines the various strategies that are being employed to deal with it – pre-school training, compensatory education at primary level and comprehensive education at secondary level – and proceeds to discuss a fourth strategy now being considered in a few countries: recurrent education. In essence this would mean that everyone who has gone to work straight from school would have a right to return to full-time education at any time during his life, regardless of how long he had been in outside employment. All of these are subjects that are being pursued in practical fashion in the various projects reported upon below.

Educational Strategies

The Strategy Group to which reference has just been made met first in Paris in February 1970. Its membership was listed in last year's report. At this meeting, the role of education in society and its contribution to achieving society's objectives were discussed in depth. It was agreed that the role of pre-primary education and of recurrent education as means for providing more equal educational opportunities and a better integration between education and society should be more clearly defined. It was also concluded that these and other new educational strategies aimed at raising the educational achievement of disadvantaged groups should be given priority in future educational research and policies.

At the invitation of the Swedish Minister of Education, Mr. I. Carlsson, the Strategy Group met again in May 1971, in Stockholm. The programme included discussion of the following topics: the Conference on Policies for Educational Growth, held at the OECD in June 1970 (background paper by Professor Ch. Frankel and Professor A. Halsey); educational strategies for raising the achievement level of children from disadvantaged backgrounds (background paper by Professor J. Coleman); the respective roles of pre-school, youth-school and adult education and the priorities to be established between them (background paper by Professor T. Husén); pre-school education as an educational strategy in its own right (background paper by the Secretariat); and recurrent education. Additionally, Professor Benjamin Bloom of the School of Education, University of Chicago, made a paper on "Individual Differences in School Achievement" available for discussion. The participants in the Stockholm meeting were:

Mr. Ingvar Carlsson, Minister of Education, Sweden.

Mr. Eugene Egger, Secrétaire-Général de la Conférence des Directeurs Cantonaux de l'Instruction Publique, Geneva.

Mr. Carl-Heinz Evers, former State Minister of Education, Berlin.

Mr. Johan Grosheide, Secretary of State for Education and Science, Netherlands.

Mr. Alain Peyrefitte, former Minister of Education, President of the Commission on Cultural Affairs of the National Assembly, France.

Professor Benjamin Bloom, School of Education, University of Chicago.

Professor James Coleman, Department of Social Affairs, Johns Hopkins University, Baltimore.

Professor Torsten Husén, School of Education, University of Stockholm.

These two meetings of the Strategy Group, with the background papers prepared for their assistance and other relevant material derived from work in the Centre, will be the subject of a report intended for issue in 1972.

CERI STAFF MEMBERS ADMINISTERING THE PROJECT

D. Kallen
K. Antonsen

Monograph on Equality of Educational Opportunity

A monograph is in the course of prepraration to provide a comprehensive and incisive analysis of existing research and experimental evidence on the interaction between social background and educational career. It also outlines the policy conclusions to be drawn from this work and opens up perspectives for future research and action.

This is being written by Professor Torsten Husén and it will be published before the end of the year under the title "Social Background and Educational Career: Research perspectives on equality of educational opportunity".

CERI STAFF MEMBER ADMINISTERING THE PROJECT: D. Kallen

Simulation Option Model for the Examination of Alternative Strategies

A Simulation Option Model has been developed in the Centre as an instrument for working out relatively quickly certain quantitative implications, including resource implications, of alternative educational strategies, thereby providing a basis for their evaluation. In general terms, it provides an analytical tool for re-designing existing plans and exploring alternative educational futures. It has been tested on case studies in the United Kingdom and France.

SOM's basic document and computer programme were presented for discussion by a group of experts at a meeting on "The Utilisation of Simulation Models for Educational Planning» convened in Paris in July 1970. Since then, Ireland and Germany have begun to explore the use of the model for some of their educational planning problems.

A technical report was published in March 1970 and a fuller document, "The Use of Simulation Models in Educational Planning", is now with the printer.

CERI STAFF MEMBER ADMINISTERING THE PROJECT: M. Nuizière

Pre-Primary Education and Programmes for the Socially Disadvantaged

The main target of the CERI work on pre-primary education has been to establish an exchange of experience and co-operation between those Member countries that have undertaken experimental programmes for this age group. Up to June 1971, there have been three meetings attended by representatives from the Netherlands, Norway, Sweden and the United Kingdom and some other experts in this field of work. A central topic at these meetings has been the problems involved in the evaluation of such programmes as are already under way. A paper by Mr. M.A. Brimer of the University of Bristol on "Evaluation Research and Action Programmes amongst the Educationally and Socially Disadvantaged" afforded a very useful basis for discussion and this will be available in print within the next few months.

A further publication in the Equal Educational Opportunity series analysing United States' experience in compensatory education ("Strategies of Compensation") is also with the printer.

CERI STAFF MEMBER ADMINISTERING THE PROJECT: K. Antonsen

Recurrent Education

A meeting was held on 16th January 1970, at which the possibilities of a co-operation between the Secretariat and national groups carrying out feasibility studies on recurrent education were explored. This was attended by representatives from France, Sweden and the United Kingdom. The concept of recurrent education, its broader socio-political implications and its relationship to other strategies aiming at achieving greater equality in society were also discussed at length at the first meeting of the Strategy Group (see above).

Following upon these preparatory discussions, it was agreed that France, Sweden and Yugoslavia would, with the help of CERI, co-ordinate their already operational or planned feasibility studies and to this end a meeting was held in Stockholm in November 1970. This clarified the position of each of the participating countries and defined the common ground for future co-operation and exchange of experience.

At the invitation of the Federal Council for Education and Culture, Yugoslavia, a Conference on Recurrent Education was held in May 1971 at Primosten. This was attended by the national feasibility study groups of France, Sweden and Yugoslavia, by experts and consultants on specific problem areas of recurrent education, by observers from the Netherlands, Norway and the City University of New York (the latter nominated by the US Office of Education) and by the responsible members of the CERI Secretariat.

At the meeting, papers on concepts of recurrent education and on its economic, financial and educational aspects were discussed. The Yugoslav Delegation, headed by Mr. Steven Bezdanov, Vice-President of the Federal Council, submitted a statement outlining the Yugoslav proposed project on recurrent education. A general programme of work to be carried out, both under the future CERI programme and in the national feasibility studies, was discussed and information was provided on the possible contribution of each of the countries represented. This meeting has enabled CERI to plan its future programme, taking into account the interests and potential contributions of the Member countries.

CERI STAFF MEMBERS ADMINISTERING THIS PROJECT

D. Kallen
K. Antonsen

Longitudinal Studies

Variation in school factors appears to have a relatively poor impact on children's achievement as compared with the impact of social heritage and environment. Equally,

educational achievement seems to have a much weaker effect upon later earnings and on career structures than has been generally thought. Both of these conclusions, if confirmed, should lead to a drastic revision of the policy of further increasing educational expenditure or, alternatively, give a new impetus to the search for alternative and eventually more rewarding educational strategies. Nevertheless, they still need confirmation, for the data on which they are based have been produced from cross-sectional research and this has proved insufficiently precise. Accordingly, the Centre proceeded to examine the possibility of longitudinal or follow-up studies as a source of more revealing data. Important in this context was a three-day meeting in September/October 1970 at which most of those responsible for on-going longitudinal studies programmes in Member countries were present.

As a result of this meeting, the Secretariat was encouraged to work out a programme for using these studies as a source of further and more meaningful information. This programme included in particular a pooling of the results of the major studies in the Scandinavian area and further analysis of the data provided by the International Study on Educational Achievement. This is expected to throw further light on learning abilities as they are affected by age and experience. However, in the revision of the CERI programme of work that became necessary in the first half of 1971, it has not been found possible to allocate time and staff to pursue these intentions further at the present time.

CERI STAFF MEMBER ADMINISTERING THIS PROJECT: D. Kallen

Annex 2

INNOVATION IN HIGHER EDUCATION

PROGRESS REPORT TO 30th JUNE 1971

(Activity 3 in CERI Programme of Work)

NEW APPROACHES TO THE TEACHING PROCESS

Curriculum Development in Universities

For the last two years CERI has studied the problem of curriculum development in the universities, using the concept of "Interdisciplinary" (teaching and research) as the main approach. Interdisciplinarity has, for several years, played an important role in attempts to reform university curricula and structures, because it challenges the basic concept of a university organised on the basis of **disciplines.** It goes beyond "pluridisciplinarity", meaning the **juxtaposition** of independent disciplines, since its minimum requirement is an **interaction** between two or more of them. This interaction may range from simple communication of ideas to the mutual integration of organising **concepts, methodology, procedures, epistemology, terminology, data.**

The first CERI activity in this field was a "Seminar on Pluridisciplinarity and Interdisciplinarity in Universities" held in Nice in September 1970. The aims were firstly to analyse and clarify the objectives and role of pluridisciplinarity and interdisciplinarity and the respective place of each in universities in the modern context, and secondly to evaluate and foster general reforms and experiments in the Member countries to meet these objectives.

At the Nice Seminar it was evident that further progress could only be made by a more detailed examination of the response of the universities to the new socio-professional needs, the acquisition of new knowledge resulting from research and, not the least, to the requirements of the students of today – all of which seem to call for the development of interdisciplinary approaches. The problem of the **environment** was considered to be such a need, and a "Workshop on Environmental Education at the University Level" was accordingly organised in Tours in April 1971. The aims were:

i) to determine the needs for new types of education for environmental specialists and, probably, for a new type of generalist with an overall grasp and understanding of environmental problems;

ii) to specify the content of courses and compare teaching methods, especially at the undergraduate level; and

iii) to evaluate structures best suited to such objectives and curricula (e.g. separate universities of the environment, or specialist institutions within or outside existing universities.

A report on tne Nice workshop will be published in the autumn of 1971 and this will be followed by an account of the proceedings and conclusions of the Tours workshop at the end of the year.

CERI STAFF MEMBER ADMINISTERING THESE PROJECTS: P. Duguet

The Goals and Functions of Universities

This project concerns problems brought to public attention by student activities in recent years, problems of the relation between education and the economy, science and politics, research and teaching and the effect of these functions on curricula and pedagogy as practiced in higher education. An initial meeting was held on 17th and 18th July 1970 which brought together fifteen people performing different functions in relation to universities. Among the questions raised then and studied subsequently are:

a) many of the special characteristics of the production, transmission and employment of knowledge stemming from a concern to reduce risk and uncertainty. How can equality of educational opportunity be regarded from a welfare point of view? How can we distribute risk incurred from unequal access to knowledge?

b) the degree of differential subsidy in the various branches of professional education itself worthy of major research relates directly to the above question of locating the costs and benefits of knowledge, possession and access;

c) what sort of informational measures are needed to make the processes of higher education more currently clear to those going through it?

d) what mechanisms govern the joint-product relations between research and teaching that characterizes academic professions and institutions? How do these mechanisms affect the selection organisation and pacing of knowledge in higher education?

A report synthesizing the results of the Centre's work in this field is in preparation and expected to be ready for publication before the end of the year.

CERI STAFF MEMBER ADMINISTERING THIS PROJECT: H. Nathan

Science and Pedagogy

The need to develop a new conception of pedagogy in which students can participate raises questions about the relation between teaching and research, between theories of learning and educational practice, and the process of change that initiate and transform disciplines and determine the relations between them.

Educators cherish an image of teaching that shows them hastening a natural learning process, independent of the particular knowledge concerned, independent of "culture", and thus adaptable to different "cultures". This reflects a view of knowledge as given, unrelated to the way it is learned, and of pedagogy as a sort of plumbing unrelated to knowledge except as a utility.

The Science and Pedagogy project set up in Geneva and Neuchatel with the collaboration of the Institut des Sciences de l'Education at Geneva and the Centre de Recherches Semiologiques at Neuchatel, with associated participating institutes in Paris and Montreal, is focused on two areas in an attempt to throw light on the functional relation between "knowledge" and pedagogy, between the structure of knowledge and its transmission, and between learning and culture. These two areas are i) learning theory and ii) the structure of transmission in education.

The part of the project concerned with learning theory is concentrating first of all on producing an inventory of the entire body of the experiments published by the eminent genetic psychologist, Jean Piaget, in a form that enables others to use them directly in teaching, for pre-school curriculum design or research. These "Piagetian Inventories" will be available before the end of 1971.

In the area referred to as "the structure of transmission in education", the project is tracing in detail the characteristics of diffusion of knowledge into curricula globally and in detail. The aim is to throw light on the way in which the structure of knowledge is moulded by pedagogical exigencies, for example in text books and examinations. The diffusion of "new maths" into French text books is being given close attention, as are some examples of the revision sequences from scientific article to text book, and from text book to scientific article.

Based on these two lines of research, an attempt is being made to develop a theory which combines them functionally. An important characteristic of Piagetian work is that children "phase out" or become inapt at the age of 11 to 13. At this critical point, the child no longer invents his own interpretation of the events around him and the influences of school begin to act decisively on his learning processes. The transition to schooling is thus a cognitive transition as well as a social one. Such a theory could throw light on non-cognitive relations to knowledge, on learning blocks, on the causes of differential access to knowledge and on the choice of subjects and careers.

Progress in all this work has been currently reported in a regular series of working documents, and these are leading to a comprehensive publication scheduled for issue in December 1971.

CERI STAFF MEMBER ADMINISTERING THIS PROJECT: H. Nathan

NEW METHODS OF INSTITUTIONAL PLANNING AND DEVELOPMENT

This programme is directed at problems caused by universities being as yet so poorly prepared to plan or manage the vast resources they consume. It aims, therefore, to demonstrate how the resource management systems of universities may be improved, particularly as concerns decision participation, finance, information, human flow, the use of physical plant and academic planning.

This objective has been met principally by the institution of research projects on one or more of these components in eight universities within a tripartite agreement between the OECD, the relevant government department in the Member country concerned and the universities themselves. The following table gives a brief review of each of these projects. Final reports on the first four, and interim reports on the last four, will be completed by July 1971 and presented to the Evaluation Conference in Paris, November 1971, to which reference is made below.

Projects in the Universities Participating in the Programme

LOCATION/LEADER	PROJECT
University of Copenhagen Professor A. Jensen	Teaching, research and thesis-advising load on faculty members; budget process criteria for initiating or dropping a subject or curriculum; definition of output of faculty. The foregoing will contribute to the study of methods of short-term and long-term planning.
Catholic University of Nijmegen Mr. J. Goossens	Construction of models relating educational programmes, research programmes and student numbers to personnel and space requirements.
University of Lancaster Professor M. Simpson	Academic and physical planning in relation to cost constraints. Investigation of step functions in costs and reactions of planning bodies to cost and constraints information.
University of Bradford Professor J. Bottomley	Analysis of costs of "producing" graduates in various disciplines. Calculation of marginal cost per student in various subject fields to aid expansion decisions. Construction of models of forecast cost variations.
Chalmers University of Technology, Gothenburg Mr. C. Appelquist	The devising of a programme budgeting system for a Swedish technical university (Gothenburg) and the development of an output-oriented finance methodology applicable to the centralized Swedish system, with emphasis on graduate training and research.

LOCATION/LEADER	PROJECT
University de Paris X, Nanterre Professor G. Terny	The feasibility of setting up a Diplôme d'Etudes Supérieures programme in economics. To arrive at a programme commonly agreed upon by students, academic staff and major employers; to analyse the decision making process within the university in establishing the programme and to evaluate the resource requirements in terms of staff, facilities and financial costs.
The University of Novi Sad, Yugoslavia Professor S. Han	To design an information system to enable normative forecasts of student flows and choice of subject within the university. To examine the entrance criteria for students with different socio-economic and regional backgrounds and the qualifications of graduates to be " produced " in terms of national/regional needs.
The Free University of Berlin (In preparation) Mr. T. Klose	Information needs for long-range planning of personnel and physical facilities in terms of the new departmental organisation of the university. The information system to be available to staff and students for exercising decision making in the various university bodies and to the university President as signing personnel in terms of qualifications and job requirements.

Centre-Based Activities

Concurrently with this programme, studies have been carried out within the Centre itself to provide inputs for testing in the various research projects. These relate particularly to university planning models (based on numerous reviews of current management techniques and on-the-spot investigations in certain North American universities) and to methods for measuring staff and facility requirements. In the course of the latter, a comprehensive questionnaire survey has been completed with the co-operation of seventy-five universities. This provides not only readily quantifiable information but indicators and indices reflecting qualitative elements also.

Additionally, the Centre has been able to arrange for a number of academic administrators to visit one or another of the universities where institutional management research is in progress and to work with the project team there over a period of several months.

Evaluation Conference

The culminating point of all this work on institutional management in higher education is an Evaluation Conference to be held in Paris from 2nd to 5th November 1971. Participants will be invited from a large number of universities and government departments in Member countries. Its objectives will be:

- to present the findings of the constituent research projects, central and extra-mural, with the support of full documentation;
- to evaluate the current state-of-the-art of university management and planning techniques and make recommendations for further studies in depth and research work;

– to consider the creation of means for continuing inter-communication and co-operation between institutions of higher education in the field of university management and to seek the participation of those represented at the conference in whatever may be generally agreed.

CERI STAFF MEMBER RESPONSIBLE FOR THIS ACTIVITY: A. Khan

RESPONSIBLE FOR PROJECTS

P. Levasseur
B. Frederiksen

Technical Working Documents (mimeographed)

As of 31st June 1971, approximately seventy Working Papers issued as part of the programme had been produced. These papers, which include General Information, In-House Activities and Field Project work are liste in document CERI/IM/70.25 (3rd Revision).

Publications in Preparation

In addition to final reports on four of the field projects, (Copenhagen, Bradford, Lancaster and Nijmegen), the following publications are also in preparation for issue in 1971:

Statistics of University Education. Reports and Discussion of Selected Experiences

Comparative Studies in Costs and Resource Requirements for Universities.

Annex 3

CURRICULUM DEVELOPMENT AND EDUCATIONAL TECHNOLOGY

PROGRESS REPORT TO 30th JUNE 1971

(Activity 4 in the CERI Programme of Work)

CURRICULUM DEVELOPMENT AND EDUCATIONAL TECHNOLOGY

In both these fields, CERI's activities are concerned with defining existing trends, drawing practical conclusions from them and assisting in the formulation of national and international policy. Activities are concentrated on projects where the potential benefits of international co-operation appear to be high. One effective means of work has proved to be a series of policy workshops, attended in each case by a cross-section of policy-makers, administrators, managers, researchers, professors and teachers. These have established the groundwork for subsequent more specialized activities, including field projects and experiments, where the interest in and need for international co-operation is particularly evident.

MEMBER OF CERI STAFF RESPONSIBLE FOR ACTIVITY 4

P. Dalin
(1969-70, now Head of Research and Development)
D.C. Thomas

CURRICULUM DEVELOPMENT

Workshop on " The Curriculum for the Eighties and Onwards"

The nature of the pressures which are causing curricula to change, and the forms some of these changes are likely to take were analysed by fifty-two participants who met at the Reinhardswaldschule near Kassel, Germany, from 29th June to 4th July 1970. The host country was Germany, and sponsoring countries were Denmark, Finland, France, Italy, Norway, Sweden and the United Kingdom.

A report entitled **The Curriculum for the Eighties and Onwards** was issued in June 1971, and specific dissemination of the workshop results will be effected in the course of the Models for Curriculum Development project which is still in progress.

Models for Curriculum Development

This project sets out to identify and examine some of the differing assumptions underlying the work of curriculum development groups in industrialized countries, their varying purposes and the ways in which they have chosen to work.

Preparatory work in the form of Steering Group meetings and expert discussions to define problems was done during 1969 and 1970. Papers on specific aspects are now being prepared by experts as basic material for discussion at a seminar to be held at the University of Illinois, United States, in September this year.

CERI STAFF MEMBER ADMINISTERING THESE PROJECTS: D.C. Thomas

EDUCATIONAL TECHNOLOGY

Workshop on " Educational Technology – Strategies for Implementation "

The two main objectives of this meeting which took place from 19th to 25th April 1970 in The Netherlands were i) to identify the implications of a systematic approach

to the teaching/learning process, and ii) to identify and develop strategies for the implementation of such an approach.

Fifty-five participants from sixteen Member countries attended and were assisted in their discussions by sixteen background papers prepared by members with special experience. The sponsoring countries were France, Germany, Sweden and the United Kingdom, the host country being The Netherlands.

A report, **Educational Technology: The Design and Implementation of Learning Systems,** will be issued during the summer of 1971. It will summarize CERI's work to date in educational technology as well as the results of the workshop.

Self-Instructional Learning Systems

This project is designed to produce i) information about the effects of an individualized learning system on a conventional school; (ii) data about the feasibility of such transfer, and iii) information about cost-reduction in the development of learning systems through transfer and inter-country co-operation.

Results will be made generally available in a publication, **Transfer Problems of Individualized Learning Systems – Report and Conclusions of an Experiment,** intended for issue before the end of 1971.

Problems of Production and Transfer of Learning Systems

The increasingly complicated relationships among developers, producers and users of pre-fabricated learning systems are currently being examined. A workshop will be held on this topic in September 1971 in Ireland with a view to producing guidelines along which much needed co-operation on a national and international basis can be achieved. It will be attended by representatives of industry as well as of education.

CERI STAFF MEMBER ADMINISTERING THESE PROJECTS

K. Hinst (until February 1971)
D.C. Thomas

COMPUTERS IN EDUCATION

Special attention has been concentrated in the Centre on problems relevant to the introduction of computer science curricula in secondary education and the instructional uses of computers in higher education. International co-operation is proving especially worthwhile in these two areas because of the relative novelty of the subject and the high rate of expenditure involved in development and institutionalization.

Computer Science in Secondary Education

Experts from 20 Member countries met at Sèvres, France, from 9th to 14th March 1970 to i) survey existing experiments dealing with the introduction of computer science in secondary education, ii) define the general aims and objectives of a new computer science curriculum, and iii) establish guidelines for such a curriculum. Following the workshop, a working party was formed to design a computer science curriculum on the basis of on-going experiments in some Member countries, namely Denmark, Finland, France, Germany, Spain, Sweden, the United Kingdom and Yugoslavia.

The results of these various studies will be available in two publications: "Computer Sciences in Secondary Education" (in press) and another comprising "Proposals for an Appreciation Course in Computer Science in Secondary Education" and "The Impact of Computer Science on Several School Subjects" (late 1971).

The Use of Computers in Higher Education

In autumn 1969 five Member countries (Belgium, France, Japan, the United Kingdom and the United States) agreed to co-operate with CERI in a series of field

experiments to establish university-level computer-based learning systems. These have continued at the University Centres concerned through 1970 into the present year.

Additionally, a conference was arranged in March 1970 to enable more than fifty experts from a number of Member countries to discuss "The Use of Computers in Education". At the request of the Japanese authorities, CERI also collaborated in organising a seminar in Tokyo in July 1970 to consider the development of computer-based teaching/learning systems in Japan.

In October 1970, in co-operation with the United States Office of Education, the National Science Foundation, and the Northwest Regional Educational Laboratory, CERI organised a seminar in Portland, Oregon, to exchange information between Americans and others about present trends in computer-based learning systems.

Publications resulting from these various activities include: "Requirements for Programming Languages in Computer-Based Instructional Systems" (March 1971), "Computer Assisted Instruction" (March 1971), "The Use of Computers in Higher Education" (June 1971) and "The Instructional Use of Computers" (September 1971).

CERI STAFF MEMBER ADMINISTERING THESE PROJECTS: A. Kirchberger

Annex 4

INNOVATION POLICIES AND STRUCTURES

PROGRESS REPORT TO 30th JUNE 1971

(Activity 5 in the CERI Programme of Work)

INNOVATION POLICIES AND STRUCTURES

In these areas, CERI has two objectives: i) to illuminate the process of innovation itself and the procedures involved in its implementation, and ii) to provide advice and assistance to Member countries, especially in the development of innovation policies and structures.

MEMBER OF CERI STAFF RESPONSIBLE FOR ACTIVITY 5: P. Dalin

The Management of Educational Innovation

One of the first activities in this section of the programme was the workshop held at St. John's College, Cambridge, in the summer of 1969 on the subject of "The Management of Innovation in Education". This was sponsored by four countries: the United Kingdom (which also acted as host country), The Netherlands, Norway and Sweden. It was attended by fifty educationists from eleven OECD Member countries.

The participants represented a cross-section of the education community – government planners, researchers, administrators, headmasters, teachers, directors of curriculum projects etc. All were directly involved in the management of various innovations within the educational system and fully aware of the problems attendant on the introduction of educational reforms when (as had often occurred) these were ill-prepared, had no clear definition of aims and objectives and little appreciation of possible side-effects.

The workshop demonstrated a great deal of consensus amongst diverse OECD countries about the need for reforms and the approaches necessary to introduce them. It also emphasized how necessary it is to have a well-defined innovation policy before innovations can be implemented efficiently.

The proceedings and recommendations of the workshop are documented in a report **The Management of Innovation in Education** which was published in February 1971.

Case Studies of National Innovation Processes

One result of the Cambridge workshop was a call for studies to be written of five countries that had already been active in introducing educational innovations. It was asked that these should attempt to answer the following questions:

What have been the most important innovations in your country in the last ten years?

How have they been implemented and with what success?

What are the areas where innovations have failed and what are the reasons for this failure?

What unique mechanisms exist in your country which attempt to stimulate change or rolling reform?

Such studies have now been made, and reports are (or, in some cases, will shortly be) available for Sweden, Norway, the Unived States, the United Kingdom and the Federal Republic of Germany.

CERI STAFF MEMBER ADMINISTERING THESE PROJECTS: D.C. Thomas

Case Studies of Innovation at the Regional Level

Within countries there are many regions – or local administrative units – that on their own account have recently introduced new educational practices or are in the process of doing so. Studies initiated by the Centre are examining several of these regions with a view to describing the content of the changes that are taking place, and the procedures or stages involved in their implementation.

This research (which has already begun in most places) is intended to cover the following areas: Devon and Leicestershire in the United Kingdom; Malmö in Sweden; the Landkreis Wetzlar in the Federal Republic of Germany; and York County regions in Ontario, Canada.

This project and the following two constitute one large attempt to learn more the process of innovation and how it can be encouraged and controlled. Preparations for all three were carried out during 1970 and final reports are expected to be completed by the summer of 1971. It is hoped that they will be published, together with summaries and conclusions supplied by the Secretariat, before the end of the year.

CERI STAFF MEMBER ADMINISTERING THE PROJECT: S. Mowat

Case Studies of Innovative Schools

The purpose of this project is to understand how change is coming about in a few selected schools, most of them places where a number of advanced practices have already been introduced. Thus, the nature of these practices, the means used for their introduction, support and management will all be closely examined. This involves scrutiny of the school itself, how it is organised, how the teachers react to the changes, and what mechanisms exist to absorb innovation. The schools selected for this project are located in Norway, Finland, Denmark, the United Kingdom and Canada. Reports on all of them are expected before the end of 1971.

CERI STAFF MEMBER ADMINISTERING THE PROJECT: D.C. Thomas

Case Studies on Central Institutes for Educational Change

Many Member countries are becoming increasingly interested in the possibilities of establishing new institutions within their educational system with specific concern for qualitative changes in the educational system and the means to bring them about. Little information is generally available about the experience of such institutions as already exist, and the purpose of the present series of case studies is to look at seven of them created in the last ten years, recognize the strategies and actions they have applied in pursuing their objectives, and assess the overall impact they have had on their country's educational system.

The seven institutions selected (subject to final agreement in some cases) are: the National Board of Education in Sweden; the National Council for Innovation in Education in Norway; the Schools Council in the United Kingdom; the Bavarian Institute for Educational Planning and Research in Germany; the Ontario Institute for Studies in Education in Canada; the Division of Research, Planning and Evaluation in the New Jersey State Department of Education in the United States; and the Research for Better Schools, Inc. in Philadelphia, United States. Reports are expected to be completed by the autumn of 1971.

CERI STAFF MEMBER ADMINISTERING THE PROJECT

K. Hinst (until February 1971)
P. Dalin

Strategies and Mechanisms for Innovation in Education

The twenty-two case studies defined in the notes on the preceding projects (five countries, five regions, seven central institutions and five schools) open the way for a synthesis of experience and prognosis over a wide area in depth. This would have considerable potential value for decision-making in Member countries now and in the near future; accordingly, the Centre has prepared for an appropriate publication

entitled "Strategies for Innovation in Education – a final synthesis of CERI case studies" for issue early in 1972.

CERI STAFF MEMBER RESPONSIBLE: P. Dalin

New Approaches to Secondary Education (Italy)

At the request of the Italian authorities, CERI organised an international workshop to discuss the background, issues and strategies related to prospective re-organisation of Italian upper secondary education along comprehensive lines. This took place from 4th to 8th May 1970 at the Centre Europeo dell' Educazione, Frascati, Italy, where experts from seven Member countries met with twenty-five Italian representatives of the teaching profession and educational administrators.

The workshop concluded by the participants adopting Ten Points of Agreement calling for the gradual, planned institutionalization of a flexible, democratic and comprehensive system of upper secondary education.

An account of this meeting will be issued under the title **New Approaches to Secondary Education: Italian Problems and Prospects** in the summer of 1971.

CERI MEMBERS OF STAFF ADMINISTERING THE PROJECT

P. Dalin
S. Mowat

Educational Research Policy

A Group of Experts was established to deal with this topic and has met twice. A paper describing some aspects of what such a policy might entail will be published during the summer of 1971.

The Secretariat's experience in this field, however, has led to doubts about the usefulness of an attempt to arrive at firm proposals to Member governments about a policy for educational research. There is a growing consensus of view that to separate research policy from educational policy in general is meaningless, and that a policy for research cannot be separated from a policy for innovation and the diffusion of innovation.

CERI MEMBERS OF STAFF ADMINISTERING THIS PROJECT

P. Dalin
S. Mowat

Annex 5

CERI's PROGRAMME FROM MID-1971

PROGRAMME FROM MID-1971

What has emerged from CERI's first three years' work is that research and experimentation necessary before the introduction of meaningful innovation in education is **often** too much for any one country to carry alone within a reasonable time, and that the sharing of this burden between countries is indeed a practicable proposition. It has been further established that Member countries see the need for a focal point for such co-operation and, through the Council of the OECD, they have accordingly made provision for the Centre to continue in this role. Thus, in mid-1971, CERI graduated from a largely experimental venture financed by the Ford Foundation and the Royal Dutch Shell Group to a Centre established within the framework of the Organisation, its costs to be borne **in the main** by Member governments. This transition was marked by the appointment of a new Governing Board composed of one national expert in the field of competence of the Centre from each of the countries participating in its programme – as distinct from the constitution of the original Board whose members were appointed in a personal capacity.

Shell companies will be providing a further $360,000 for central purposes to assist while the new financial structure comes fully into being, and up to another $250,000 to help national projects conceived as part of the new international programme.

As concerns the future, CERI cannot be a research institution as such since its resources would be marginal in relation to the research and development efforts of Member countries; nor can it pursue all the potentially useful areas of co-operation between these countries. In its future work it has, rather, to be highly selective in terms of its specific competence (that is, as a technical and operational unit working in close co-operation with the OECD Education Committee which is the policy body) and be ready to initiate but subsequently decentralize activities that can be more effectively progressed and managed under more specialized auspices. Pointers towards the desirability of such decentralized projects have already emerged in the course of the 1968-1971 programme.

Against this background, and still within the broad socio-economic context where it began, CERI's future activities will be directed towards three comprehensive objectives, or Programme Areas, which can be defined as follows:

I. **Research into the relations between Education and Society** so as to arrive at educational strategies that take account of the qualitative and quantitative aspects of growth in the 1970s.

II. **The development and exchange of innovations in the teaching/learning process** so that growing educational resources are more efficiently used as a result of international co-operation.

III. **The strengthening of national and international arrangements for educational innovation** so as to facilitate the effective introduction of improvements authenticated by work done in Programme Areas I and II.

PROGRAMME AREA I – RELATIONS BETWEEN EDUCATION AND SOCIETY

Work carried out in the Centre during the last three years clearly demonstrates that new educational strategies are emerging which may radically change the relationship between education, society and the economy. Research is needed to clarify such strategies and to assess the costs and benefits of alternative policies. The OECD is

particularly competent to promote such studies because of its general concern with the processes of long-term economic and social development and its multi-disciplinary approach to the development of policies.

The main effort to explore future educational strategies in the context of social and economic development must, of course, be made by Member countries themselves within their own borders. Nevertheless there will remain considerable scope for useful international collaboration and it will be one of the functions of the Centre in 1972 to work out a basis for this. The primary business of the Secretariat in this area, however, will be research into specific issues that have already been identified as of priority importance, and to this end the following three projects will be started in 1972:

Project 1 (Area I) – Early Childhood Education

The crucial importance of the 2-4 year age period as demonstrated by recent research is leading to widespread recognition of the need for policies to expand pre-primary education. The realization of such policies, however, turns on the adoption of one or another of several alternatives as seen, for example, in the choice between a compulsory or voluntary form of such extension of education, in education's relationship to the home and to the community, in the exploitation of new educational techniques and in education's administrative relationship to other community services such as health and housing.

Project 1 will attempt to develop a framework within which such alternatives can be seriously and practically examined.

Project 2 (Area I) – Recurrent Education

The aim of a system of recurrent education (i.e. the right of anyone who has gone to work straight from school to return to full-time education at any time during his life) is to find a new relationship between the individual's development and his career pattern on the one hand and the educational opportunities open to him on the other. Its premise is that the present trend of longer and more generalized education (leading ultimately to universal higher education) fails to recognize the different abilities and patterns of development of individuals, provides educational opportunities biassed in favour of the existing social structure and is leading to disequilibrium between educational output and the needs of society, including the labour market.

Work hitherto on this topic in the Centre has been based on feasibility studies that related to a few countries only. Interest has, however, spread so rapidly that it is now intended to widen it into a fully international co-operative programme of research.

Project 3 (Area I) – New Functions and Structures of the School

The failure of many schools to provide effective learning is leading to radically new approaches towards their proper functions and structures. These stem partly from recent research into concepts such as "mastery" learning, individualization, self-teaching by students and so on, and partly from growing recognition of the fact that culture outside the schools has more influence on the learning process than the school itself. Many experimental models for new schools are being tried out in OECD countries and an analysis of these, possibly leading to a co-operative network of experimental schools, is considered a potentially valuable undertaking. Accordingly an inventory of existing experiments will be completed in 1972 and there will be further analysis of the role and influence of educational activities outside the school.

PROGRAMME AREA II – DEVELOPMENT AND EXCHANGE OF INNOVATIONS IN THE TEACHING/LEARNING PROCESS

It is widely recognized that the rapid educational growth that has taken place in most countries in the 1960s must be accompanied in the 1970s by widespread qualitative changes within the system – for, in the last analysis, the effectiveness of such growth must depend on changes in the teaching/learning process.

The extent of such a development is so great that CERI's resources could only have a marginal impact if directed to specific problems or areas of the curriculum. It is intended, therefore, to concentrate on ensuring a selective exchange of experience and results between Member countries. In the light of studies carried out during the 1968-1971 experimental period, the following projects are being initiated in 1972 to implement this intention.

Project 1 (Area II) – Guidelines for Curriculum Development

At present Member countries are largely mutually ignorant of the curriculum development work being carried out beyond their own borders. The aim of this Project is to produce a synthesis of what has been done in this field throughout the OECD area in the form of a handbook of practical guidelines for Member countries, and to make proposals for continuing international co-operation in matters relating to curriculum development.

The survey of existing activities will be completed in 1972 with the assistance of an international panel of experts co-operating with national liaison groups convened in each participating country. The Centre will also help forward national schemes for training curriculum developers, basing its advice on experience gained during a three-week pilot course it conducted in July 1971.

Project 2 (Area II) – The Transfer of Curriculum Development Projects and Learning Systems

Although there is considerable mutual ignorance between countries as to the curriculum development work and the production of new learning systems achieved beyond their own frontiers – and this, as said, is the point of departure of Project 1 – some transfer of results has been attempted between countries. Examination of such cases by the Centre reveal that there is no orderly process to facilitate this and the transfers have taken place without adequate preparation or negotiation. Nor are there any established principles to govern the relationship between public education authorities and private developers.

Project 2 gives CERI the task of easing this situation by identifying major transfer possibilities, providing further development work to enable the transfer process and advising Member countries of results obtained elsewhere that may well fulfil their current needs.

Project 3 (Area II) – Computer Science in Secondary Education

Work on computer sciences in CERI's 1968-1971 programme was aimed to produce guidelines for the curriculum, promote teacher training and propose appropriate materials and teaching equipment. This will be carried forward in 1972 with the promotion of practical experiments in selective Member countries and assistance in the adaptation of learning material developed elsewhere.

Project 4 (Area II) – Curriculum Development in Universities

Following on the exploratory work on interdisciplinary teaching carried out in 1970-71, a more systematic approach will now be adopted towards problems of curriculum development in the universities. During 1972 a study group will be set up to survey existing innovative programmes and curriculum development processes and to recommend specific areas in which development work should be concentrated – as it might be environmental or health education. Co-operation between countries already engaged in pilot experiments will be encouraged.

PROGRAMME AREA III – STRENGTHENING NATIONAL AND INTERNATIONAL ARRANGEMENTS FOR EDUCATIONAL INNOVATION

The approach of different countries towards the evaluation of strategies for educational change and the organisational processes to bring them into effect varies in accordance with their own political and administrative regimes. All in the OECD area, however, recognize that the inherent conservation of the educational system calls for new and specific arrangements and policies to enable the process of innovation.

The Centre's work in this field hitherto has been largely through case studies of institutions created to promote educational innovation at the national, regional and local levels. As a result, a series of reports is being produced to define the conditions for successful innovation in different political, social, economic and educational settings.

The 1972 programme provides for enquiry and assistance in two specific problem areas in the field of innovation management.

Project 1 (Area III) – Creativity in the School

Increasingly there has been insistence on the importance of creativity in the school itself – even if this is to be within an ordered framework of agreed objectives. There is still need, however, for better understanding of how creativity can be encouraged there by new organisational procedures and structures, and by changes in external legal, administrative and professional arrangements (e.g. school finance, teacher training, mandates for experimentation and salary structures).

This Project aims to formulate alternative models for school creativity and to investigate the external factors affecting it.

Project 2 (Area III) – The Mediterranean Innovation Project

Four countries that are only now beginning to establish organised arrangements for research, experimentation and development in education have expressed a wish to make use of the results obtained in the course of the Centre's multi-national studies. This Project is designed to meet this wish by assisting each of the countries to establish innovation processes and mechanisms in a chosen region as a pilot experiment on which general policies can be based. Co-operation between the countries will be fostered by the Centre as these undertakings go forward.

FOLLOW UP ACTIVITIES – DECENTRALIZED PROJECTS

As already stated, CERI can only maintain its innovative role if it is ready to decentralize control of projects which it has initiated but show signs of growing in scope and stature beyond the Centre's managerial and financial resources. Four such projects are envisaged as a result of work done or co-ordinated by CERI during the 1968-1971 experimental period.

Project 1 (Decentralized) – A European Programme for the Learning Sciences

This relates to endeavours to establish universities for the educational sciences in several OECD countries. CERI's existing network of co-operation, based on the Piagetian School in Geneva, will undoubtedly be of great value here.

Project 2 (Decentralized) – A University Management Consortium

CERI's work on the institutional management of universities points to the continuing need for the exchange of data on management and techniques between countries and between the universities themselves. Institutions with this function already exist in North America and, with considerable encouragement from the countries concerned, the Centre is fostering the creation of a counterpart in Europe that, as well as serving the OECD members in Europe, would co-operate with Australia, Canada, Japan, and the United States.

Project 3 (Decentralized) – Computer-based learning systems for universities

The Centre's international project on this topic has opened up fruitful lines for development, particularly in the direction of creative learning systems for mass higher education. This work now needs a specialist institution to catalyze scientific co-operation between the participating university departments. It is hoped that one of the existing national teams will be able to assume this international function.

Project 4 (Decentralized) – International Management Training for Educational Change

Management training for those who will administer educational change calls for an established institutional setting with a strong central team located in an existing major teaching, research or development centre where a strong resident team could be supported by other specialists from neighbouring countries. Probably, on account of language problems, there shall be two of these. The management and maintenance of such a centre or centres would be beyond CERI's physical or personnel resources; nevertheless particular multi-national experience gained here in the last three years puts the Centre in a specially qualified position to work out its requirements, curriculum and the classes of professional people who would benefit from the courses offered. Accordingly it is intended, after 12 months planning, to propose pilot courses in management training for educational change and in the light of the evaluation of them to foster two or three pilot courses in an interested Member country or countries in 1973-75.